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MAIN APPROACHES OF TEACHING CHEMISTRY FOR 1ST YEAR STUDENTS AT THE PROFESSIONAL COLLEGE

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Annotation. *Integration of Ukraine into the European educational system, an organization of educational system according to the Bologna system promotes the entry of our country into the international education field. The training of competitive specialists of Pharmacy is important in the work of an educational institution. In this article authors consider the main approaches to the improvement of educational process, especially on chemistry teaching at the professional college of Bukovinian State Medical University.*

Key words: *chemistry, specialists of Pharmacy, chemistry.*

Introduction.

Modern chemistry is a fundamental system of knowledge based on a variety of experimental material and theoretical positions. The breadth of concepts, objects, problems, and methods of chemistry determine its participation in the development of other sciences, and, in particular, biology, pharmacology, toxicology, and medicine. Knowledge obtained in the study of this subject gives an idea of the microstructural particles of matter: atoms, molecules, ions and others, as well as the course of chemical reactions - from the simplest to those occurring in living organisms [1].

It should not go without mention that chemistry makes a significant contribution to modern medicine. The synthetic drugs and new auxiliary agents that reduce the labor-intensive operations (adhesives for gluing wounds, various artificial plastic materials, etc.) are of great importance, thus creation of which would not be possible without a considerable development of chemical science.

The objective of teaching the course "Chemistry" to students from foreign countries of the preparatory faculty aims to develop knowledge level which is necessary for the successful passing of entrance exams and further study of chemical disciplines at a medical university. It also aims to create chemical thinking, ability to predict the interaction effects of the substances used as drugs, and the consequences of their transformations in the living organisms [2].

Problem statement.

The aim of this work is to investigate the principal aspects of the chemistry study (school program course) by first year students at the professional college of the Bukovinian State Medical University. Knowledge gained during this year should become the basis for the study of inorganic, organic, analytical chemistry later.

As the experience of the teachers of the professional college of BSMU has

shown, many 1st year students are learning far from their full potential and, as a result, do not pay enough attention to their study. This fact may be explained, in part, by a low level of interest and cognitive motivation, dealing with the importance of the knowledge gained at senior courses. Therefore, a tendency of the teacher's work with the first year students consists in the mobilization of their cognitive activity. The effectiveness of learning activities, which manifests itself in the mastering of knowledge, the promoting and development of interest in learning, the formation of independent opinion and preparation for entry into the master grade in the future depends on its decision [3].

The basic source representing the theoretical material remains a lecture. That is why they should be as much informative as possible, cover the theoretical issues and will consider in practical classes activate the audience thinking through questions enforcing for reflection.

With the arrival of students in an educational institution, they want to be convinced that lectures are advisable to attend because even the best manuals or books and appliances contain only the general material related to the curriculum. In his turn, the teacher reports current scientific information, the results of recent studies that are not enlightening in the educational literature, establishes connections with the study material and new information, determines its place in the system of topics, sections of the training course, predicts its further consideration.

In the process of preparing for a lecture, the teachers of our department try to focus attention on the fundamental chemical concepts, terms, without any specification. It is necessary to take into consideration that a lecture lasts within a limited time, and it is impossible to cover scientific and educational material on a particular topic in full, besides it is not a task of the teacher. The essential aim is to concentrate students on the leading ideas, principles, and creation of their scientific concepts, judgments, at the same time directing them towards the developing of their own opinions and concepts [4].

It needs to keep on reminding that the overload of the content of the lecture by scientific terms, facts, and categories distracts the attention of the listeners, quickly tires them and induces to write the notes in the synopsis automatically. A significant amount of new information makes it difficult for students to understand the nature of phenomena, principles and reduces the positive motivation of learning. However, insufficient informative lectures are also dangerous as far as it may cause students' boredom intending to engage in foreign affairs.

The introduction of interactive learning technologies is very effective, in particular, an interactive multimedia lecture, which allows the teacher to enlarge the content of the educational material. It requires less time to cover an extent of information and, enhances the quality of a lecture material understanding, which is the most important thing [5].

In addition to theoretical training, first year students acquire the necessary abilities and practical skills in practical and laboratory classes in chemistry.

In order to achieve the ultimate aim of the subject study, it is necessary to start learning the theoretical principles of the general chemistry at the beginning of the course, since they are essential for all subsequent sections of inorganic and organic

chemistry. In particular, such topics include “Atom Structure”, “Periodic Law”, “Types of Chemical Reactions”, “Chemical Equilibrium”, “Solutions”, “Electrolytic Dissociation”. Considerable attention should be paid to the study of the properties of those elements, the compounds of which play a significant role for pharmacy and medicine.

Resulting from the students' insufficient methodological providing, teachers of the professional college of BSMU developed methodological instructions for practical classes preparation which is relevant to the educational curriculum. The relevance of the topic actuality needed for future medical activities is precisely formulated, the educational objectives are given in the methodological instructions.

According to the educational program the student must know:

- basic concepts and laws of chemistry;
- the periodic law and structure of the periodic system;
- electronic structure of atoms;
- types of chemical bonds;
- theory of solutions;
- the theory of electrolytic dissociation;
- properties of elements of different groups;
- basic theoretical principles of organic chemistry;
- properties of the major classes of organic compounds.

The student should be able to:

- to write chemical formulas of different classes of inorganic and organic compounds;
- to write equations of a chemical reaction of interaction in different compounds;
- determine the valence and degree of oxidation of the elements in the compounds;
- to write electron configuration of atoms of elements;
- to give characteristics of the chemical element, its most important compounds due to the electron configuration and position in the periodic system;
- to formulate the dissociation equation of different classes of compounds;
- to constitute the equation of interaction of different classes of organic compounds depending on the type of chemical bond and functional group.

Initial assessment of students' knowledge is carried out during practical classes in the beginning and includes the knowledge control of the theoretical material outlined in the previous lesson through a general questioning. It is carried out by:

- writing reaction equations that reflect the chemical nature and properties of the phenomenon being studied;
- writing of electron configurations of the elements and conclusions about their most important stages of oxidation, compounds and possible chemical properties.

Formative assessment is carried out during practical classes by:

1) solving tasks for each topic being studied, based on the methodical instructions to the students and based on the recommendations of the corresponding

collections of tasks where the decision is made;
2) questioning the theoretical material orally next to the board;
3) fulfilling of control tasks on this topic, which includes exercises, transformations, various tasks of Levels I and II.

Midpoint assessment is carried out by attestation thematic control work, or in the form of the colloquium.

Summative assessment of the students' knowledge completes with an exam, conducted in the form of written control work on the questions of the examination question program.

One of the means of intensifying the process of training and improving the quality of preparation for students of the preparatory department, especially in the context of the Bologna process, is an independent student's work. It contributes to the formation of autonomy, initiative, discipline, accuracy, sense of responsibility, necessary for the future specialist in education and professional activities [6].

A significant contribution to the preparation of students from foreign countries is made by using modern computer technologies such as university and department sites, which contain information not only about the academic staff of the department, but also about the educational process, syllabuses, methodological development of lectures, practical exercises, independent work, topics for individual work, recommended literature for self-study and etc. This information facilitates the preparation of students. Application of interactive technologies makes it possible to organize the students of the preparatory department both for the team work (work in groups) as well as for the individual, which consists in preparing projects in the form of presentations and their further defence. Also, for the handy use of the future students, an independent work is offered on a server of a student's distance learning of BSMU "MOODLE".

Conclusions.

Successful resolution of the critical task of the high school for the first year students training demands the development of new conceptual approaches, models of educational systems on a scientific basis; the use of modern pedagogical, and new information technologies in education and self-study; organization of training and education of those students in higher medical institution on the basis of comprehensive analysis of the their specifics, further scientific development and improvement of the methodology of their training, improvement of the educational activity level including innovative technologies and forms of educational activities in the learning process that will effectively increase the professional competence of students; improvement of requirements to the manuals and adaptation of textbooks to the peculiarities of students comprehension.

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